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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.       | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------|------------------|
| 10/731,830   | 12/09/2003  | Bahram Keramati      | 133743-1/YOD<br>GERD:0072 | 4403             |
| 41838 7590 05/14/2008<br>GENERAL ELECTRIC COMPANY (PCPI)<br>C/O FLETCHER YODER<br>P. O. BOX 692289<br>HOUSTON, TX 77269-2289 |             |                      |                           |                  |
| EXAMINER<br>LEUNG, PHILIP H  |             |                      |                           |                  |
| ART UNIT   |             | PAPER NUMBER         |                           |                  |
| 3742   |             |                      |                           |                  |
| MAIL DATE  |             | DELIVERY MODE        |                           |                  |
| 05/14/2008   |             | PAPER                |                           |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/731,830

**Applicant(s)**

KERAMATI ET AL.

**Examiner**

PHILIP H. LEUNG

**Art Unit**

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**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31, 41 and 42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-30, 41 and 42 is/are rejected.
- 7) ☒ Claim(s) 2 and 31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

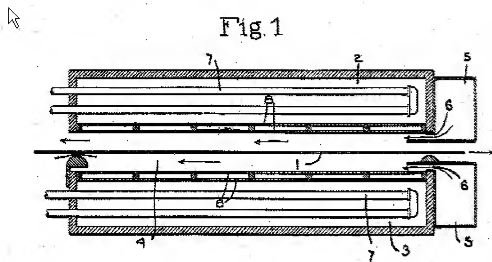
1. The drawings filed 1-22-2008 are acceptable.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Andrews et al (US 1,560,589) (previously cited).

The broadly worded structure still does not define over Andrews as it shows a radiation absorption zone 4 (the space where material 1 passes through) for receiving a gaseous flow carrying particulate matter; a transparent shield (8) surrounding at least a portion of the radiation absorption zone; a radiation source (7) configured to receive power from a power source and to generate radiation and to direct the radiation into the radiation absorption zone to promote reduction of the particulate matter from the gaseous flow, the radiation source separated from the flow of the particulate matter by the transparent shield (7); and an insulation layer at least partially surrounding the radiation source (see Figures 1 [as shown below] and 2 and page 2, lines 36-95). The limitations "particle reduction", "radiation absorption", for receiving a gaseous flow" are intended use only and add little patentability weight to the claimed structure. Andrews clearly can be used for the same function as it shows all the claimed structure.



4. Claims 1, 3, 5-9, 13, 18-20 and 24 are rejected under 35 U.S.C. 102 (b) as being anticipated by Henric (US 4,170,455) (previously cited).

Again, the broadly worded structure still does not define over Henric as it shows a radiation absorption zone 14 for receiving a gaseous flow carrying particulate matter; a transparent shield (10) surrounding at least a portion of the radiation absorption zone; a radiation source 26 configured to receive power from a power source and to generate radiation and to direct the radiation into the radiation absorption zone to promote reduction of the particulate matter from the gaseous flow, the radiation source separated from the flow of the particulate matter by the transparent shield (as set forth at col. 8, lines 3-11, it states that "the gas heater in Figure 2) consists of a suitably insulated electric resistance type heater wrapped around a section of pipe through which the inlet gas passes", that is, the radiation source (the heater) is separated from the gas by the pipe wall forming the shield); and an insulation layer (see col. 8, lines 3-8) at

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least partially surrounding the radiation source (see Figures 1 and 2 and col. 5, line 46 – col. 8, line 65). Again, the limitations “particle reduction”, “radiation absorption” are intended use only and add little patentability weight to the claimed structure. Henric clearly can be used for the same function as it shows all the claimed structure as it also shows a source of a gaseous flow as claimed in claim 16. In regard to claim 6, see col. 7, lines 55-68. In regard to claims 8, 9, 19 and 20, it also optionally includes a control device for control the power source of the heater 26 according to the sensing outputs of sensors 16 and 18 (see col. 8, lines 3-11).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-30, 41 and 42 are rejected under 35 U.S.C. 103(a) as being obvious over Henric (US 4,170,455), in view of Wagner et al (US 5,101,095) (previously cited).

As set forth above, the broadly worded structure is met by Henric as it shows a gas treating device with every feature as claimed except that it does not use the device as a particle reduction apparatus. More particularly, it shows a radiation absorption zone 14 for receiving a gaseous flow carrying particulate matter; a transparent shield (10) surrounding at least a portion of the radiation absorption zone; a radiation source 26 configured to receive power from a power source and to generate radiation and to direct the radiation into the radiation absorption zone to promote reduction of the particulate matter from the gaseous flow, the radiation source separated from the flow of the particulate matter by the transparent shield (as set forth at col. 8, lines 3-11,

it states that “the gas heater in Figure 2) consists of a suitably insulated electric resistance type heater wrapped around a section of pipe through which the inlet gas passes”, that is, the radiation source (the heater) is separated from the gas by the pipe wall forming the shield); and an insulation layer (see col. 8, lines 3-8) at least partially surrounding the radiation source (see Figures 1 and 2 and col. 5, line 46 – col. 8, line 65). However, Wagner shows a device using a radiating heating source 38 with a power source 54 for treating exhaust to reduce particulate pollutants (see Figures 1-4 and col.2, line 43 – col. 3, line 45). It would have been obvious to an ordinary skill in the art at the time of invention to modify Henrie to use its device for treating exhaust gas source in order to reduce harmful pollutants to increase its utilities, in view of the Wagner. In regard to claim 6, see Henrie, col. 7, lines 55-68. In regard to claims 8, 9, 19 and 20, it also optionally includes a control device for control the power source of the heater 26 according to the sensing outputs of sensors 16 and 18 (see Henrie, col. 8, lines 3-11). In regard to claims 10-13, 21-23, 41 and 42, both Henrie and Wagner show the use of sensors for control the power to the heater. The exact arrangement of the control module would have been a matter of engineering expediencies depending on the overall system.

7. Claims 2 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Applicant's arguments filed 1-22-2008 have been fully considered but they are not persuasive. As pointed out above, the claims as amended still do not define over Andrews or

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Henric. More particularly, Andrews shows all the claimed structure, “particle reduction” and “configured to receive power from a power source and to generate radiation and to direct the radiation into the radiation absorption zone to promote reduction of the particulate matter from the gaseous flow” is only an intended use and adds no structure to the claimed apparatus, clearly, Andrews can be used for the same purpose as claimed and the function would be inherently achieved. In regard to Henric, the argument that the heating means 26 of Henric is not separated from the gas stream is not well taken as Henric shows another embodiment with the heater 26 wrapped outside of the gas pipe and therefore is separated from the gas flow. Only, claims 2 and 31 define over the art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H. Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Philip H Leung/  
Primary Examiner, Art Unit 3742

Philip H Leung  
Primary Examiner  
Art Unit 3742

P.Leung/pl  
5-11-2008

